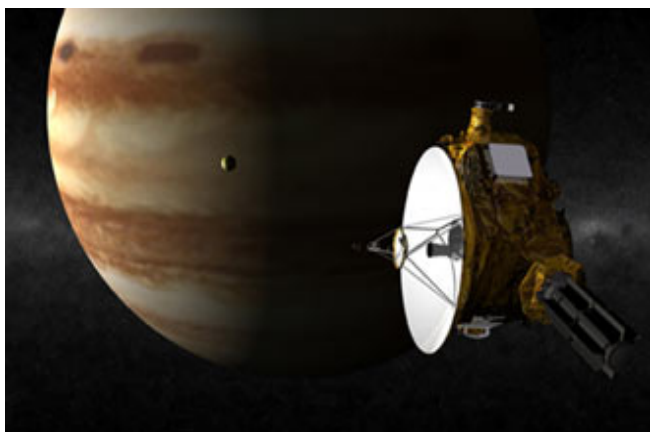


## NASA Weekly Update

Week of January 16 - 22, 2007

**Jan 18: NASA Spacecraft En Route to Pluto Prepares for Jupiter Encounter:** NASA's New Horizons spacecraft is on the doorstep of the solar system's largest planet. The spacecraft will study and swing past Jupiter, increasing speed on its voyage



*Artist's concept of the New Horizons flyby of Jupiter*

toward Pluto, the Kuiper Belt and beyond. The fastest spacecraft ever launched, New Horizons will make its closest pass to Jupiter on Feb. 28, 2007. Jupiter's gravity will accelerate New Horizons away from the sun by an additional 9,000 miles per hour, pushing it past 52,000 mph and hurling it toward a pass through the Pluto system in July 2015. The New Horizons mission team will use the flyby to put the probe's systems and seven science instruments through the paces of more than 700 observations of Jupiter and its four largest moons. The planned observations from January through June include scans of Jupiter's turbulent, stormy atmosphere; a detailed survey of its ring system; and a detailed study of Jupiter's moons. For more information on New Horizons on the Internet, visit: <http://www.nasa.gov/newhorizons> and <http://pluto.jhuapl.edu>.

### Jan 17: THEMIS Mission to Provide New

**Understanding of Substorm Life Cycle:** NASA's THEMIS, the Time History of Events and Macroscale Interactions during Substorms mission, is set to venture into space and help resolve the mystery of what triggers geomagnetic substorms. For the first time, scientists will get a comprehensive view of the substorm phenomena from Earth's upper atmosphere to far into space, pinpointing where and when each substorm begins. Substorms are atmospheric events visible in the northern hemisphere as a sudden brightening of the Northern Lights. THEMIS also will provide clues about the role of substorms in severe space weather and identify where and when substorms begin. THEMIS' five identical probes will be the largest number of scientific satellites NASA has ever launched into orbit aboard a single rocket. THEMIS is set to launch in mid-February aboard a Delta II rocket from Launch Complex 17-B at Cape Canaveral Air Force Station, Fla. For more information about the THEMIS mission and imagery, visit: [www.nasa.gov/themis](http://www.nasa.gov/themis).

## Weekly Status Reports



### Space Shuttle

#### Atlantis (OV-104)

Mission: STS-117 - 21st International Space Station Flight (13A) -

S3/S4 Truss Segment Solar Arrays

Vehicle: Atlantis (OV-104)

Location: Orbiter Processing Facility Bay 1

Launch Date: Targeted for March 16, 2007

Launch Pad: 39A

Crew: Sturckow, Archambault, Reilly, Swanson, Forrester and Olivas

Inclination/Orbit Altitude: 51.6 degrees/122 nautical miles

Final vehicle closeouts are under way in preparation for technicians to move Atlantis to the

Vehicle Assembly Building on Feb. 7. This week, technicians worked to close out the forward reaction control system, the midbody and aft areas. The payload bay doors were cycled and closed for flight. The payload bay door strongbacks were removed Thursday. Final orbiter power down is scheduled for Jan. 25. On Jan. 19, the external tank scheduled to fly with Atlantis, designated ET-124, was moved from the checkout cell in the Vehicle Assembly Building to be mated to the solid rocket boosters in high bay 1. Space Shuttle Program managers held a review on Tuesday and gave the "go ahead" to mate the tank with the boosters.

#### Endeavour (OV-105)

Mission: STS-118 - 22nd International Space Station Flight (13A.1) -

S5 Truss Segment

Vehicle: Endeavour (OV-105)

Location: Orbiter Processing Facility Bay 2

Launch Date: Targeted for June 28, 2007

Launch Pad: 39A

Crew: Kelly, Hobaugh, Williams, Morgan, Mastracchio, Caldwell and Anderson

Inclination/Orbit Altitude: 51.6 degrees/122 nautical miles

Endeavour remains in Orbiter Processing Facility bay 2 and technicians continue preparing the vehicle for its first launch in just over four years. The vehicle has undergone an extensive modification period, including the addition of all of the return-to-flight safety upgrades added to both Discovery and Atlantis. This week, technicians completed main propulsion system leak, functional and electrical checkouts. Late Thursday, the first of three space shuttle main engines was installed.



New supplies arrived at the International Space Station Friday night as an unpiloted Russian cargo spacecraft docked to the Pirs Docking Compartment. With more than 2.5 tons of food, fuel and supplies for the station's Expedition 14 crew, the ISS Progress 24 automatically docked to Pirs at 8:59 p.m. CST on Friday as the station flew 220 miles above the South Atlantic off the southeast coast of Uruguay. The 24th Progress to visit the station launched Wednesday night from the Baikonur Cosmodrome in Kazakhstan.

Unlike its predecessor, Progress 24 linked up

to the station after its automated rendezvous antenna retracted as planned in the final 50 meters prior to docking. On Oct. 26 the automated navigation antenna on the Progress 23 failed to retract. Expedition 14 Commander Mike Lopez-Alegria and Flight Engineer Mikhail Tyurin will conduct a spacewalk in late February to manually retract and tie down the antenna



*The ISS Progress 24 cargo craft rolls out to the launch pad.*

before the older Progress undocks from the aft port of the Zvezda service module in early April.

The crew will open the hatch to the new Progress overnight and deactivate the systems of the newly arrived craft before its cargo is unloaded over the next few weeks. Progress 24 holds 1,720 pounds of propellant for the Russian thrusters, 110 pounds of oxygen and almost 3,300 pounds of spare parts, experiment hardware and life support components.



- **Feb 18, 2007:** Launch of THEMIS
- **NET March 16, 2007:** Launch of Space Shuttle Atlantis from Kennedy Space Center.
- **March 19, 2007:** Landing of the Expedition 14 crew at Kazakhstan's Baikonur Cosmodrome. The crew includes Commander Michael Lopez-Alegria, Flight Engineer Mikhail Tyurin, and Flight Engineer Sunita Williams .
- **NET March 2007:** Launch of the Expedition 15 crew. The crew includes Commander Fyodor Yurchikhin and Flight Engineer Oleg Kotov. Williams will finish her remaining time of her six-month tour of duty on the station as a member of Expedition 15 crew.

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